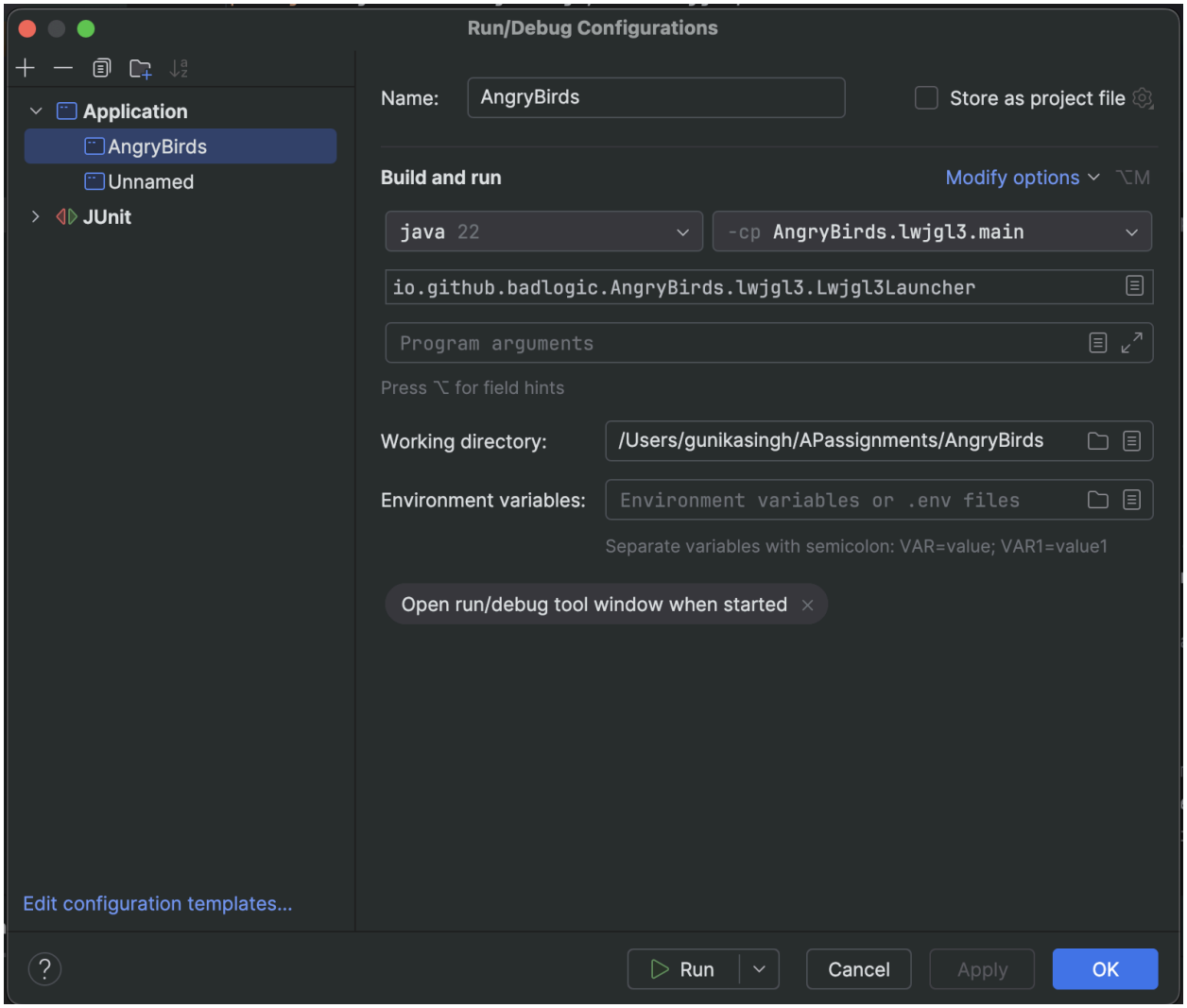
README

How to Run

On IntelliJ IDE with proper LibGDX configuration and Java 22 SDK installed, the game can be run through the Lwjgl3Launcher.java that can be found at /src/main/java/io/github/badlogic/AngryBirds/lwjgl3/Lwjgl3Launcher.java. Or configurations can be edited and set to:



We also have prepared 9 JUnit Tests to test the functioning of LevelState and serialization.Specifically, they verify that bird, block, and pig positions are correctly saved to and read from files during gameplay. The tests include:

1. **File Existence Checks**: Ensure that save files are created successfully for birds, blocks, and pigs.
2. **Data Integrity Validation**: Verify that saved data is not empty and matches the expected format, including proper timestamps and position details.
3. **Functional Verification**: Confirm that save functions store data in the correct structure and format to support consistent level reloading.

Comprehensive cleanup ensures test reliability by deleting temporary test files after execution. These tests guarantee robust and consistent save functionality for our game.

Assumptions:

- There are 3 levels, with a combination of 3 types of birds(red, yellow, black), 3 types of blocks(stone, glass, wood) and 3 types of pigs(small, medium, king).
- Saved Games are maintained through serialization and are identified through timestamp they were saved at.
- A pig or block is considered destroyed if it leaves the frame or its health reaches 0.
- Game is won when all pigs are dead.
- Game is lost when all birds are used and all pigs aren't dead.
- A launched bird stays on screen even after it's been launched and hit the blocks.

Extra features (bonus):

1. Yellow Bird, Red Bird and Black Bird have special powers, where Yellow Bird can speed up in the horizontal direction when Space Bar is pressed, Black Bird can double its size when Space Bar is pressed, and Red Bird can drop vertically when Space Bar is pressed.
2. The impact of Birds on Pigs and Blocks(hits taken) is dependent on the velocity of the bird, making it more similar to real-world physics.
3. There are sound effects for collisions and the launched bird, with looping background music and on winning and losing.
4. The looks of the pigs and blocks change with their health, so that their health status is visible from their appearance.
5. Our home screen, win screen and lose screen are dynamic, as we have manually made game objects appear to give an animation type effect.